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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,263	02/04/2004	Takayuki Shimada	829-620	1391

23117 7590 10/21/2008

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EXAMINER	
CHIEN, LUCY P	
ART UNIT	PAPER NUMBER
2871	
MAIL DATE	DELIVERY MODE
10/21/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/771,263	SHIMADA ET AL.	
	Examiner	Art Unit	
	LUCY P. CHIEN	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 September 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24 and 34-60* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24 and 34-60* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claim 1-24,34-60 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5,12-17,21,23,24,34,35,37-39,43,44,46-48,52,53,55-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noda et al (US 5585951) in view of Landa (US 4460667).

Regarding Claim 1-5,14-17,21,34,35,43,44,52,53,

Noda et al (Fig. 2G - Fig. 30G) discloses a liquid crystal display device, gate lines (1330), source lines (S), switching elements (1700) each arranged near a crossing of each gate line and each source line, a gate electrode (1777) of each switching element being connected to the gate line (1330), a source electrode (S) of the switching element being connected to the source line (2204), a drain electrode (D) of the switching element being connected to a pixel electrode (1787) for applying voltage to a liquid crystal layer, wherein an photosensitive acrylic resin (column 5, rows 50-55 and column

9, rows 60-67) insulating layer is etched (1784). The insulating layer covers the drain electrode (D) to insulate from other electrodes, the gate line, and the source line. The pixel electrode (1787) is on the interlayer insulating film (1784) ,the pixel electrode (3017) overlaps the source line (S). The insulating film (1784) is 1.5 mu.m or more (Fig. 17)

Noda et al does not disclose a photosensitive resin having a dielectric constant of 3.4 to 3.8, and a spectral transmittance of the transparent interlayer organic insulating film has a lower transmittance for blue light than that for green and red light.

[Examiner is including reference of Landa (column 3, rows 48-50) only to show *the scientific fact* that the acrylic resin used to make the insulator in Noda et al has a dielectric constant property of 3.0-3.5 which are overlapping ranges of the claims ranges of 3.4-3.5. In re Aller, 105 USPQ 233.(therefore the date of the reference is irrelevant)]

The acrylic resin taught by Noda et al that is photosensitive having a dielectric constant of 3.0- 3.5, are properties of an insulating layer which has a lower transmittance for blue light than for green and red light. Thus, wherein a spectral transmittance of the transparent interlayer organic insulating film has a lower transmittance for blue light than that for green and red light is met. (as explained in applicant's specification [0090] US 2001002857).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Noda et al to include Landa's dielectric constant fact of the acrylic resin motivated by the desire to produe a reliable photosensitive

insulating film on top of the TFT to embed the irregularities on the surface of the device bus line are (abstract).

Regarding Claim 12,23

The limitation such as, "insulating film suppresses degradation by resist removing solution used to form the pixel electrode" is considered as product-by-process claim. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same ~ or obvious fxom a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777F.2d 695,698, 227 USPQ 964, 966 (Fed. Cir. 1985); see also MPEP 2113).

Regarding Claim 13,24,

In addition to Noda et al and Landa as disclosed above, since the transparent insulating layer disclosed by Noda et al is made of a same material and having the similar dielectric constant as the claimed transparent insulating layer, it would have at least been obvious to one of ordinary skill in the art at the time of the invention was made that the transparent insulating layer of Noda et al has a light transmittance of 90% or more for light within an entire wavelength range of about 400nm to about 800 nm.

Regarding Claim 37,46,55

In addition to Noda et al and Landa as disclosed above, Noda et al discloses (Fig. 13) wherein the pixel electrode (1322) overlaps the gate lines (1330) by about 1 mu.m or more (1.5 mu.m)

Regarding Claim 38,39,47,48,56,57

In addition to Noda et al and Landa as disclosed above, Noda (column 8, rows 50-55) discloses a semiconductor layer on top of the gate insulating layer which is of amorphous silicon.

Claims 6-11,18-20,22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noda et al (US 5585951) and of Landa (US 4460667) in view of Takatoh et al (US 5128788).

Regarding Claim 6-9,11,18-20,22

Noda et al and Landa disclose everything as disclosed above.

Noda et al and Landa do not disclose the use of a positive type photosensitive resin including a copolymer glycidyl.

Takatoh et al (Column 4, rows 5-20) discloses the use of a positive type photosensitive resin including a copolymer glycidyl added for a thermally reactive function which has a reactive peak at a wavelength of 365 nm.

It would have been obvious to one of ordinary skill in the art to modify Noda et al and Landa to include Takatoh positive type photosensitive resin including a copolymer

glycidyl motivated by the desire to add a thermally reactive function (Column 4, rows 5-20).

Regarding Claim 10,

In addition to Noda et al, Landa and Takatoh et al as disclosed above, Noda discloses the transparent interlayer organic insulating film is cured (column 11, rows 15-20).

Claims 40,41,49,50,58,59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noda et al (US 5585951) and of Landa (US 4460667) in view of Shoji et al (US 5051800).

Noda et al and Landa disclose everything as disclosed above.

Noda et al and Landa do not disclose a contact layer made of amorphous silicon over the semiconducting layer.

Shoji et al discloses (Fig. 8) a contact layer made of amorphous silicon (17a,17b) over the semiconducting layer (15).

It would have been obvious to one of ordinary skill in the art to modify Noda et al and Landa to include Shoji et al's contact layer made of amorphous silicon (17a,17b) over the semiconducting layer (15) motivated by the desire to provide that restricts deteriorations of the display quality. (Abstract).

Claims 36,45,54,60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noda et al (US 5585951) and of Landa (US 4460667) in view of Mori et al (US 5359441).

Noda et al and Landa disclose everything as disclosed above.

Noda et al and Landa do not disclose the pixel aperture is at least about 65% or 80%.

Mori et al disclose the pixel aperture is at least about 80% to improve the efficiency of the utilized light.

It would have been obvious to one of ordinary skill in the art to modify Wakai et al and Misawa et al to include Mori et al's pixel aperture is at least about 80% to improve the efficiency of the utilized light (Column 6, rows 1-10).

Claims 42,51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noda et al (US 5585951) and of Landa (US 4460667) in view of Wakai et al (US 5229644).

Regarding Claim 42,51,

Noda et al and Landa discloses everything as disclosed above.

Noda et al and Landa do not disclose the thickness of the pixel electrodes is no greater than 1500A.

Wakai et al discloses the thickness of the pixel electrodes is no greater than 1500A (column 5, rows 10,11).

It would have been obvious to one of ordinary skill in the art to modify Noda et al and Landa to include Wakai et al's pixel electrode thickness motivated by the desire to be able to connect to the drain through the insulating layer.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUCY P. CHIEN whose telephone number is (571)272-8579. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571)272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lucy P Chien
Examiner
Art Unit 2871

/David Nelms/

Supervisory Patent Examiner, Art Unit 2871